

GENERAL INDEX TO VOLUME XLIV

New scientific names of plants and the final members of new combinations are printed in bold-face type; synonyms and page numbers having reference to figures and plates, in *italics*; and all other matter, in ordinary type.

A

- Adiantum cordifolium*, 167; *ternatum*, 150
Africa, tropical, Some lichens of, II. Usnea, 1
Age of genera in the Cleomoideae in relation to their morphology, 104
Allosorus andromedaeifolius, 179, 184; *atropurpureus*, 144; *bellus*, 161; *brachyp-terus*, 162; *Breweri*, 135; *cordatus*, 166; *flexuosus*, 174; *mucronatus*, 158; *myrti-lifolius*, 184; *ornithopus*, 158; *Pringlei*, 172; *sagittatus*, 168; *subverticillatus*, 150; *ternifolius*, 150
Aloitis, 235; *divaricata*, 244; *foliosa*, 245; *mesochora*, 245; *occidentalis*, 245; *parvi-flora*, 244; *quinqueflora*, 244; *quinque-folia*, 235
Amarella, 248; *acuta*, 253; *amarella*, 254; *amarelloides*, 244; *anisosepala*, 253; *arcto-phylla*, 237; *auriculata*, 261; *cobrensis*, 259; *conferta*, 253; *copelandi*, 254; *gur-liae*, 254; *bartwegi*, 260; *heterosepala*, 251; *lemberti*, 254; *macounii*, 254; *mexi-cana*, 258; *microcalyx*, 246; *monantha*, 264; *occidentalis*, 245; *plebeja* var. *holmii*, 254; *propinqua*, 247; *revoluta*, 254; *sco-pulorum*, 251; *strictiflora*, 254; *tenella*, 264; *tenuis*, 254; *theiantha*, 254, var. *lactea*, 254, var. *livida*, 254; *tortuosa*, 248; *ventorum*, 237; *wislizeni*, 235; *wrightii*, 259
American wild hop, 271
Amstutz, Erika: A new genus of Iso-etaceae, 121
Androcalymma, A new genus of the tribe Cassieae (Caesalpiniaceae), 295
Androcalymma glabrifolium, 295, 297
Antidesma scandens, 274
Anthopogon, 209; *amarella*, 248; *barbata*, 213; *barbellatus*, 230; *brevifolium*, 223; *detonsa*, 213; *elegans*, 217; *incarnatum*, 223; *macounii*, 228; *procerus* var. *ton-sum*, 228, f. *uniflorum*, 228; *procerus*, 226; *simplex*, 232; *thermalis*, 217; *ton-sum*, 228; *virgatum*, 226
Arabis aprica, 327; *fruticosa*, 318
Aridity: and rapid evolution, 110; struc-tural trends in the Cleomoideae in rela-tion to, 88

- Asplenium atropurpureum*, 144
Astyposanthes, 306, 327; *angustifolia*, 336; *humilis*, 345; *leiocarpa*, 337; *monteviden-sis*, 343

B

- Bracts of hops, 282, 282; scar lengths of, 282, 284, 285, 289, 290; veins, 282, 282

C

- Caesalpiniaceae, *Androcalymma*, a new genus of, 295
Cannabinaceae, 272
Capparidaceae: Studies in the, III. Evolu-tion and phylogeny of the western North American Cleomoideae, 77; taxonomy of the, 77
Capparis spinosa, 77
Cassebeera andromedaeifolia, 179, var. *gra-cilis*, 179, var. *pubescens*, 179, var. *rubens*, 179; *atropurpurea*, 144, var. *glabella*, 141, var. *minima*, 141; *cordata*, 167; *intermedia*, 177; *ternifolia*, 150, var. *longimucronata*, 155, var. *mucronata*, 158, var. *ornithopus*, 158, var. *stipitata*, 158
Cassieae, *Androcalymma*, a new genus of the tribe, 295
Cheilanthes lanuginosa, 150; *mucronata*, 158, var. *Wrightiana*, 153; *pubescens*, 179; *ternifolia*, 150; *Weddelliana*, 150
Chironia, 202
Chlora, 202
Chromosome numbers: in species of Gen-tianella and related genera, 198; in Pellaea Sect. Pellaea, 129
Cicendia tenella, 264
Cleome: evolution of, 99, 106, 107; geo-graphic distribution, 88, 96, 97, 98, 100, 104; morphology, 78, of fruits, 80, 81, 82, 94, of inflorescence, 85, 87, 89, of stipules, 87, 88, 89; phylogeny, 81; tax-onomy, 77
Cleome sect. *Peritoma*, 77; *isomeris*, 78, 98; *lutea*, 78, 80, 87, 89, 98, var. *jonesii*, 78, var. *lutea*, 94; *multicaulis*, 78, 80, 98; *platycarpa*, 78, 80, 98; *serrulata*, 78, 98; *siliculifera*, 80; *sparsifolia*, 78, 98

Cleomella: distribution of, 89, 90, 96, 98, 99, 101, 104, 106; geographic evolution of, 77, 107; morphology, 78, of fruits, 80, 81, 82, 94, of inflorescence, 84, 85, 87; of stipules, 87, 89; phylogeny, 81; taxonomy, 77

Cleomoideae: Evolution and phylogeny of the, 77; age of genera in, 104, 111; distribution of the western North American genera of, 88, 90, 96; geographical evolution of the, 99, 106, 107; morphology, 78, 81; taxonomy, 77

Climate, relation between, and morphology of the *Cleomoideae*, 88

Coelanth, 202

Complexes in hops, Morphological, with special reference to the American race, 271; American, 273, 291, 292; continental, 286, 292; English, 299, 290

Cones of hops, 273, morphology of, in varietal identification, 275

Crawfurdia, 197

Crossopetalum, 210; *gentianoides*, 210

Crypteris divaricata, 179; *pubescens*, 179

D

Darinphytrum, 202

Dasystephana auriculata, 261

Davis, Edward L.: Morphological complexes in hops (*Humulus lupulus* L.) with special reference to the American race, 271

Denckea, 210; *crinita*, 223

Desert survival of the *Cleomoideae*, 91

Dicorynia, 296

Dodge, Carroll W.: Some lichens of tropical Africa. II. *Usnea*, 1

Dwyer, John D.: *Androcalymma*, a new genus of the tribe *Cassieae* (*Caesalpiniaceae*), 295

E

Ericala acuta, 253

Erythalia, 248

Eumitria firmula, 9

Eupellaea, 133

Evolution and phylogeny of the western North American *Cleomoideae*, 77, 104, 107

Environment, relation of, to morphology of hops, 283; of the *Cleomoideae*, 88

Evolutionary relationships of the western North American *Cleomoideae*, 114

F

Fern genus *Pellaea*, 125

Frasera, 202

Fruit reduction series of the North American *Cleomoideae*, 80, 81, 82

G

Gentiana, index to names, 267

Gentianella Moench, A revision of the North American species of, 195; chromosome data, 198; generic position, 196; geographic distribution, 206; history of, 201; index to names, 267; morphology, 204; taxonomic treatment, 208

Gentianella, 210

Geographic distribution of the *Cleomoideae*, 96, 97; relation of generic origin to, 97, 100, 101

Gillett, John M.: A revision of the North American species of the genus *Gentianella* Moench, 195

H

Halenia, 197

Hedysarum hamatum, 318, var. α , 324, var. β , 341

Hippion auriculatum, 261; *longepedunculatum*, 264; *quinquefolium*, 244

Hop: the American wild, 274, 289, distribution of types, 291; varieties, Backa, 286, 289, Brewer's Gold, 289, Fuggles, 281, 286, 289, Hallertau, 288, 289, 290, Late Clusters, 278, 281, 283, 287-290, SAAZ, 281, 288, Styrian, 290; Tettang, 290

Hops (*Humulus lupulus* L.), Morphological complexes in, with special reference to the American race, 271: bract scar, 282, 284, 285, bracts, 282, 282; cone morphology, 275, 276, 277, axis, 281, 281, 282, 284, 285; inflorescence, 275, 276; leaf, 279, 283, dentation, 279, pubescence, 281

Humulus, 271; *aculeatus*, 273; *amarus*, 273; *americanus*, 273, 274; *communis*, 273; *cordifolius*, 273; *cordifolius*, 273, 275; *lupulus*, 273, 275, var. *cordifolius*, 275, var. *neomexicanus*, 273, 274; *scandens*, 273, 274; *volubilis*, 273; *vulgaris*, 273

I

Iltis, Hugh H.: Studies in the *Capparidaceae*. III. Evolution and phylogeny of the western North American *Cleomoideae*, 77

Inflorescences in the *Cleomoideae*, 84, 84, 86, 87

Isoetaceae, *Stylites*, a new genus of, 121

Isoetes, 121

Isomeris arborea, 78

Ixanthus, 197

J

Jaeschkea, 197

L

Leaves: in genera of Cleomoideae, 87; of hop varieties, scores of lobe and dentation number, 287, 288

Leianthus lanceolatus, 220

Lichens of tropical Africa, Some, 1

Lomatogonium, 197, 203

Lupulus amarus, 273; *scandens*, 273, 274

M

Martusia, 296

Medicinal uses of hops, 272

Megacodon, 269

Mohlenbrock, Robert H.: A revision of the genus *Stylosanthes*, 299

Morphological complexes in hops (*Humulus lupulus* L.) with special reference to the American race, 271

N

North American Cleomoideae, evolution and phylogeny of, 77

Nothochlaena andromedaefolia, 179; *atropurpurea*, 144; *cordata*, 167; *ternifolia*, 150

O

Ononis coriifolia, 314

Opsantha, 209

Orthoselection in genera of the Cleomoideae, 95

Oxystylis: age of genus, 108, 111; distribution of, 89, 90, 97, 99, 101; morphology, 78, 81, of fruit, 80, 82, 83, of inflorescence, 85, 86, of stipules, 87, 88; phylogeny, 81; taxonomy, 78

Oxystylis, 73; *lutea*, 78, 80, 82

P

Pellaea, section *Pellaea*, A revision of the fern genus, 125: cytology, 129; ecology, 126; geography, 126; index to names, 192; morphology, 127; phylogeny, 129; taxonomy, 133; use and cultivation, 132

Phylogeny of the North American Cleomoideae, 77, morphological basis for, 81

Platyloma andromedaefolia, 179; *atropurpurea*, 144; *bella*, 161; *brachyptera*, 162; *cordata*, 166; *flexuosa*, 174; *sagittata*, 168; *ternifolia*, 150

Pleurogyne, 197

Pneumonanthe, 202

Polypodiaceae, 125

Pteris andromedaefolia, 179; *atropurpurea*, 144, var. *punctata*, 144, var. *venosa*, 144; *cordata*, 166; *flexuosa*, 174; *ovata*, 174; *peruviana*, 150; *sagittata*, 168; *subverticillata*, 150; *spiculata*, 144; *ternifolia*, 150; *thalictroides*, 144; *triphylla*, 150

R

Revision of the fern genus *Pellaea* section *Pellaea*, 125

Revision of the North American species of *Gentianella* Moench, 195

Revision of the genus *Stylosanthes*, 299

S

Spiragyne, 209

Stipules, modifications of, in the Cleomoideae, 87, 87, 89

Studies in the Capparidaceae, III. Evolution and phylogeny of the western North American Cleomoideae, 77

Stylites, a new genus of Isoetaceae, 121

Stylites andicola, 121, 123

Stylosanthes: A revision of the genus, 299; generic relationships, 300; geography, 304; history, 299; index to names, 354; morphology, 300, of loment, 301, 303; systematic treatment, 306; uses, 305

Swertia, 197, 203

T

Taxonomy: of the Cleomoideae, 77; of *Gentianella*, 208; of *Pellaea* section *Pellaea*, 133; of *Stylosanthes*, 306

Tryon, Alice F.: A revision of the fern genus *Pellaea* section *Pellaea*, 125

Trifolium biflorum, 327; *guyanense*, 331, 332

U

Usnea, 1; *acantha*, 63; *aequatoria*, 27; *africana*, 68; *albomaculata*, 48; *amaniensis*, 71; *amplissima*, 63; *angulata* f. *chloreoides*, 67, var. *flaccida*, 28, f. *goniodes*, 66; *arguta*, 74; *arthroclada* subsp. *arthrocladodes*, 63; *articulata* subsp. *aethiopica*, 17; *articulata* f. *erubescens*, 57, var. *intestiniformis*, 17; *bakongensis*, 69; *barbata* var. *articulata* f. *erubescens*, 57, var. *aspera*, 46, var. *cornuta*, 49, var. *farinosa*, 37, var. *bispidula*, 29, var. *myrioclada*, 52, var. *pulverulenta*, 12, var. *strigosa* f. *complanata*, 11; *bicolorata*, 59; *blepharoides*, 35; *Bornmuelleri*, 48; *brunnescens*, 10; *cameroonensis*, 25; *capensis*, 50; *cartilaginea*, 30; *ceratina* var. *picta*,

54; cervicornis, 1; *chloreoides*, 67; *chondroclada*, 61; complanata, 11; *cornuta* var. *Meyeri*, 60; corrugata, 12; Dalei, 56; decipiens, 26, var. *Rhodesiana*, 27; *dasy-poga* var. *exasperata*, 23; *dasy-pogoides* var. *exasperata*, 23; *deminuta*, 17; *distensa*, 64; *Dodomae*, 4; *eburnea*, 72; *elata*, 7; *erubescens*, 57; *exasperata*, 23; *fari-nosa*, 37; *Fernandiae*, 67; *firmula*, 9; *flaccida*, 28; *flavescens*, 13; *florida* var. *densirostra*, 31, var. *ochrophora*, 44, var. *pulverulenta*, 12, f. *pygmaea*, 11, var. *strigosa* f. *complanata*, 11; *Flotowii*, 49; *Flotowii* subsp. *serpentaria*, 50, var. *sub-hispida*, 61; *foveolata*, 17; *fragilis*, 20; *fusca*, 26; *goniodes*, 66; *Gossweileri*, 53; *gracilis*, 21; *haumanii*, 32; *hispida*, 43; *hispidula*, 29; *horridula*, 56; *indigena*, 73; *isabellina*, 55; *Ledienii*, 43; *Liechten-steinii*, 6; *livida*, 70; *longissima* f. *Eber-steinii*, 75, var. *horridula*, 56; *luteola*, 40; *Lyngei*, 52; *maculata*, 61; *marocana*, 63; *medio-africana*, 10; *Meyeri*, 60, var. *chondroclada*, 61; *molliuscula*, 36; *mon-iliiformis*, 22; *myrioclada*, 52; *nana*, 8; *nutans*, 4; *obtusata*, 36, f. *perflava*, 37, f. *perstrigosa*, 37; *ochrophora*, 44; *pec-tinata*, 31; *perhispidella*, 2; *perspinosa*, 39; *picta*, 54; *Pinkertonii*, 24; *praelonga*,

14; *Promontorii*, 65; *pseudocypshellata*, 15; *pulchella*, 21; *pulverulenta*, 12; *pulvinata*, 51; *pulvinulata*, 5; *rugosa*, 19; *Ruwenzoriana*, 32; *savanarum*, 72; *Schim-peri*, 11; *scutata*, 47; *serpentaria*, 50; *simplicissima*, 33; *sorediosula*, 3; *speciosa*, 15; *spilotoides*, 59; *Steineri*, var. *sub-florida*, 58, var. *tincta* f. *sorediosa*, 37; *straminea*, 23; *strigosa* var. *Ledienii*, 43; *strigosella*, 38; *subcristata*, 7; *subflorida*, 58; *subfoveata*, 45; *subleprosa*, 42; *sub-mollis*, 34; *syriaca*, 41; *terricola*, 29; *ter-restris*, 18; *torrida*, 54; *trachyna*, 46; *transvaalensis*, 31; *trichodeoides*, 75; *tropica*, 31; *undulata*, 37; *usambarensis*, 30; *Vainioana*, 20; *versicolor*, 11; *vesi-culata*, 16

W

Wislizenia: age of genus, 108, 111; distribution of, 89, 90, 97, 98, 99, 100; evolutionary relationships, 110, 114; morphology, 78, of fruit, 80, 82, 83, of inflorescence, 84, 84, 89, of stipules, 87, 87; phylogeny, 81

Wislizenia, 78, 84; *refracta*, 78, 87, 89, var. *melilotoides*, 83, var. *palmeri*, 80, 94, var. *refracta*, 80

